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Indian Standard
SPECIFICATION FOR
UMBRELLAS, FOLDING—MANUAL

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR UMBRELLAS, FOLDING—MANUAL

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Indian Standard

SPECIFICATION FOR UMBRELLAS, FOLDING—MANUAL

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 29 August 1983, after the draft finalized by the Umbrellas Sectional Committee had been approved by the Consumer Products and Medical Instruments Division Council.

0.2 The figures, in the standard, are given only as a typical illustrations and shall not be considered as suggestive of any standard design.

0.3 This standard is related to the manufacturing and trade practices prevailing in the country.

0.4 The shapes of the handles have not been specified as these are usually according to the dictates of fashion.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down the requirements for manual operating folding umbrellas designed for individual protection against rain and sun.

2. TYPES

2.1 The manual operating folding umbrellas shall be of the following two types depending upon the nature of folding:

- a) Type 1 — Regular, two section, folding; and
- b) Type 2 — Topless, folding;

*Rules for rounding off numerical values (revised).

3. SIZES

3.1 The manual operating folding umbrellas shall be of the following sizes:

Type of Umbrella	Nominal Size and Number of Ribs
Type 1	470 mm x 10, 495 mm x 10 and 546 mm x 10
Type 2	483 mm x 8, 533 mm x 8 and 546 mm x 8

NOTE — The nominal size of the umbrellas shall be denoted by the size of the rib. Normal engineering tolerances (medium type) in accordance with IS : 2102 (Part I) - 1980* shall be permissible on the nominal size.

4. MATERIALS

4.1 The various components of the folding umbrellas shall be made from the materials specified in Table I. Materials not specifically designated shall be suitable for the purpose intended.

TABLE 1 MATERIALS FOR COMPONENTS OF FOLDING UMBRELLAS

SL No.	COMPONENTS	MATERIAL	CONFORMING TO
(1)	(2)	(3)	(4)
i)	Inner tube and outer tube	Steel sheet	IS : 513-1973*
ii)	Handle	Plastic or metal	—
iii)	Ribs	Carbon steel round and flat wire	IS : 4223-1975†
iv)	Runner	Steel, tinplate, brass, zinc alloy or plastic	—
v)	Notch	Brass, zinc alloy, steel or plastic	—
vi)	Ferrule	Tin plate or plastics	—
vii)	Umbrella cloth	Dyed or printed nylon or art silk (water-proofed)	—
viii)	Chandwa	Plastic or cloth	—

*Specification for cold rolled carbon steel sheets (second revision)

[†]Specification for cold rolled carbon steel sheets (second revision).
[‡]Specification for steel wire for umbrella ribs (first revision).

5 WORKMANSHIP AND FINISH

5.1 A schematic diagram of assembled folding umbrellas are given in Fig. 1 and 2.

*General tolerances for dimensions, and form and position : Part 1 General tolerances for linear and angular dimensions (*second revision*).

5.2 Both the inner and outer tube, with groove and depression at the top respectively, shall be straight. The outer diameter of inner tube shall be such that it can smoothly slide inside the outer tube when the umbrella is folded and closed. It shall not have any undesired shake or play inside the outer tube. The inner tube shall have a groove along its length while the outer tube shall have a depression to suit groove. The tube shall be chromium over nickel plated in accordance with Grade 3 of IS : 1068-1968*. The surface of the tubes shall be free from burrs and other surface defects and shall not be visibly rough.

5.3 The stopper shall be properly fitted at the tube, and when depressed and released ten times with the thumb, it shall return to normal position.

5.4 The main ribs shall be of folding type, that is, consisting of two ribs stretching along with the cloth. The foldable ribs joint shall be such that while folding the umbrella, it functions smoothly and does not damage the umbrella cloth.

5.5 The cloth shall be suitably cut in panels and firmly stitched together by a sewing thread conforming to variety No. 20 or 22 of IS : 1720-1978†. The colour of the thread shall match with the shade of the cloth or with any one colour of the printed cloth/cloth having different colour combinations. The colour of the thread shall be fast. The minimum number of stitches per 25 mm shall be 10. Edge of umbrella cloth shall be either of natural border (selvedged) or stitched (in case of slitted border). If stitched, the minimum number of stitches per 25 mm shall be 8. The cloth shall also be strengthened at the top above the notch and under the cloth by putting a plastic or cloth piece known as *CHANDIVA*. In addition, a rubber or waterproof washer may be fitted over the cloth under the ferrule. The cloth shall be stitched firmly to the holes at the ends of the ribs with a minimum of five stitches and also suitably stitched at the junction of the main ribs and stretcher ribs. At the top, the cloth shall be bound with the help of sewing thread wound round five times and so stitched that each seam shall get one stitch and the thread shall travel spirally around the wound thread, finishing the work with an additional two knots at the last seam. The seams shall not yield or buldge and the cloth shall not be slack or show any other defect when the umbrella is fully opened. The stitching thread shall not be visible on the outer surface.

5.6 The umbrella shall be capable of being opened and closed smoothly without the runner getting stuck.

*Specification for electroplated coatings of nickel and chromium on iron and steel (first revision).

†Specification for cotton sewing thread (second revision).

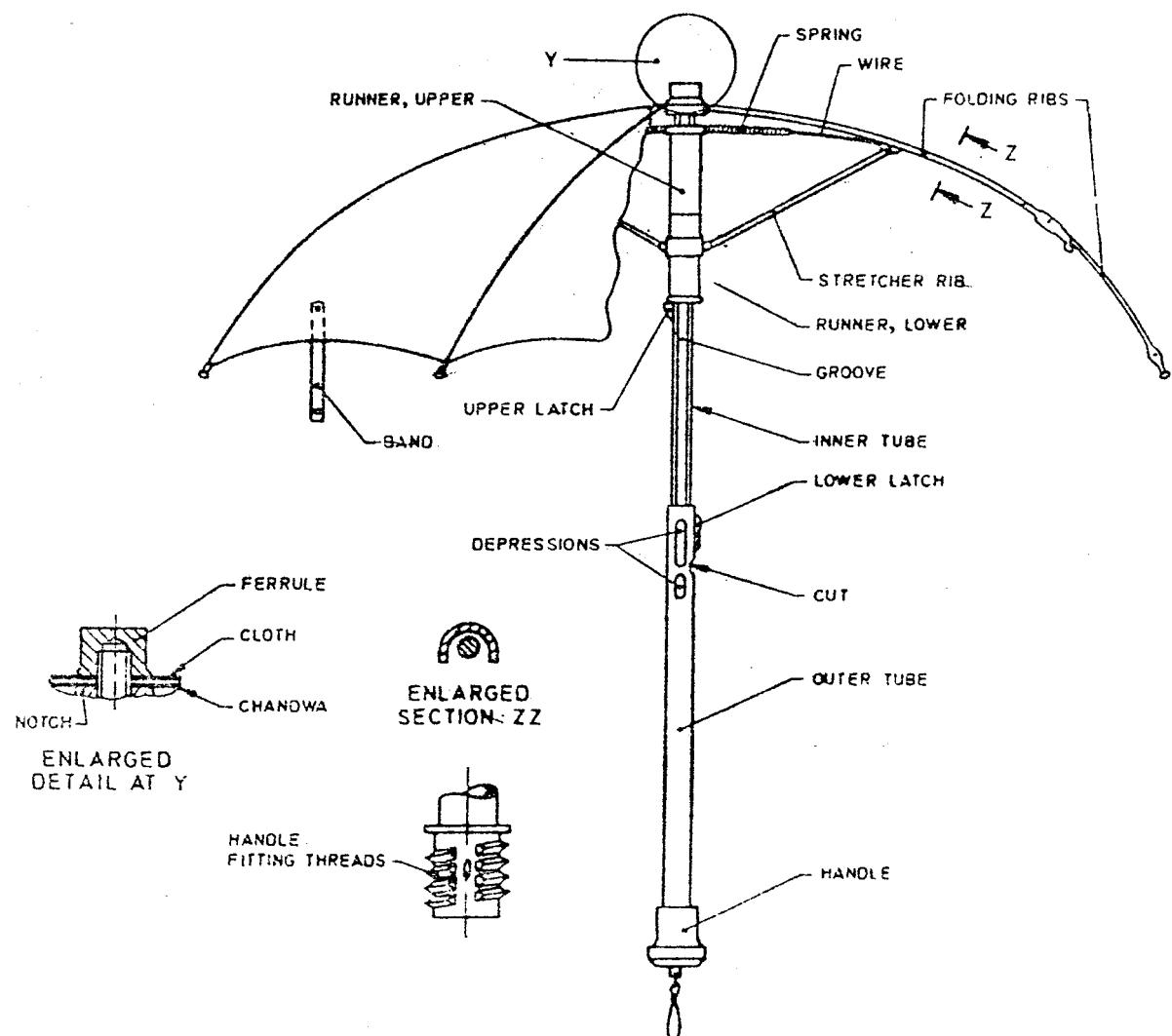


FIG. 1 UMBRELLA, FOLDING, MANUAL, REGULAR; TWO SECTIONS

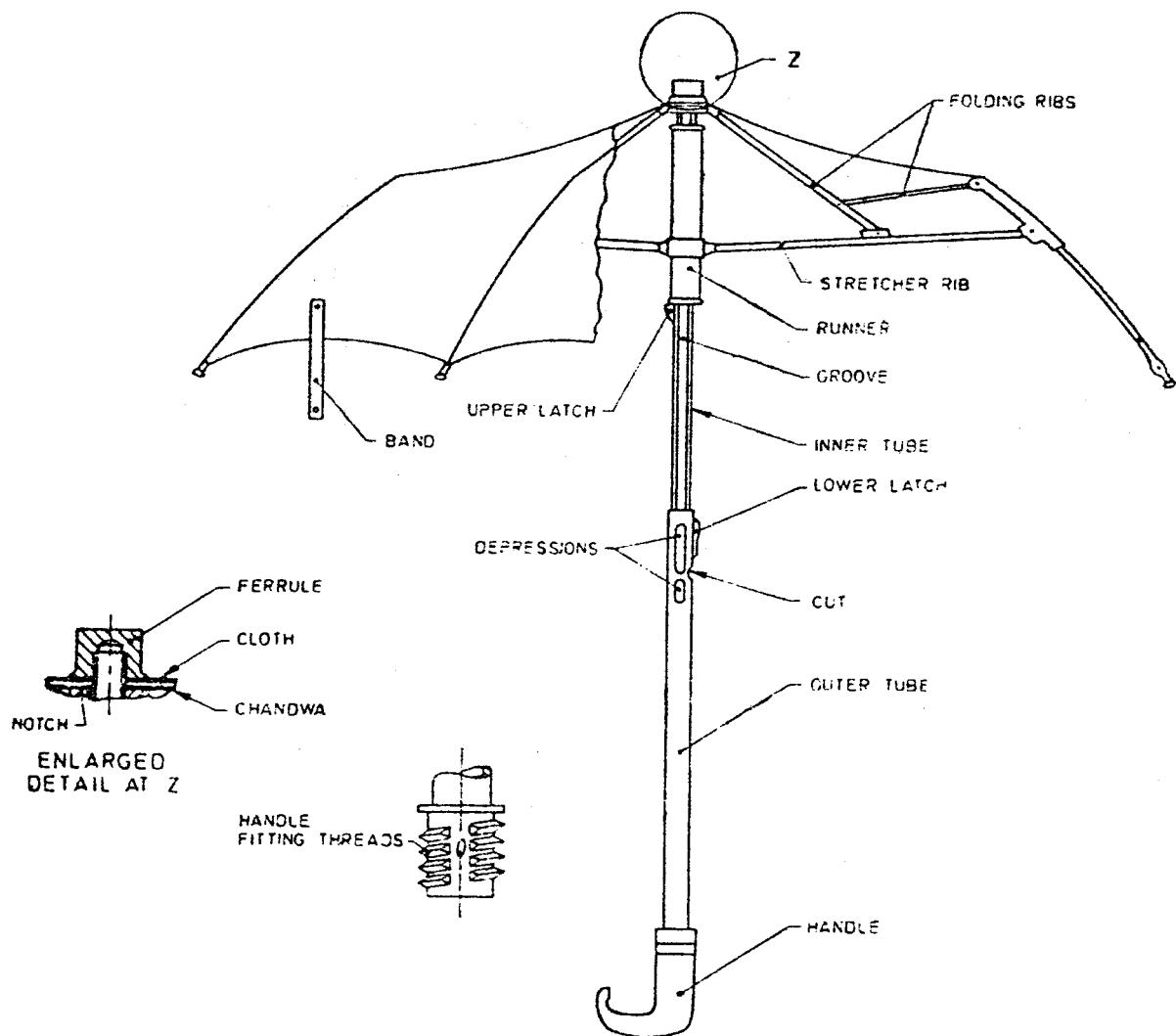


FIG. 2 UMBRELLA, FOLDING, MANUAL, TOPLESS

5.7 The umbrella shall be provided with a suitable band made of same cloth used for the umbrellas or plastic or rubber or elastic tape having a ring at the free end and a button at the fixed end for wrapping the cloth when the umbrella is closed. Alternatively, the band may be provided with a press button.

6. TESTS

6.1 Performance Test — The umbrella shall be opened and closed 50 times and folded, the ribs shall not show any deformation and the cloth shall not show any signs of opening of seams or bulging. Folding system shall function properly.

6.2 Pull Test — The umbrella shall be closed, folded and clamped approximately in the central portion on the outer tube in such a manner that it is vertical with the handle downward. The umbrella shall be subjected to a load of 5 kg on the handle for one minute. The handle shall not break or get detached from the tube.

7. MARKING

7.1 Each folding umbrella shall be marked with the following information:

- a) Manufacturer's name, initials or trade-mark;
- b) Type;
- c) Size;
- d) Month and year of manufacture/supply (if specified by the purchaser);
- e) Batch No. or Code No.; and
- f) The words 'Made in India', if exported.

7.1.1 The umbrellas may also be marked with the ISI Certification Mark.

Note — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

8. PACKING

8.1 Each folding umbrella shall be suitably packed in a plastic or cloth or rexine cover as agreed to between the purchaser and the supplier. The transit packing shall also be as agreed to between the purchaser and the supplier.

9. SAMPLING AND INSPECTION

9.1 Sampling procedure and acceptance criteria for manual folding umbrellas, shall be as agreed to between the purchaser and the supplier. A recommended scheme for the same is given in Appendix A.

A P P E N D I X A (Clause 9.1)

SAMPLING SCHEME AND CRITERIA FOR CONFORMITY FOR UMBRELLAS, FOLDING—MANUAL

A-1. LOT

A-1.1 In any consignment all the umbrellas of same type and size and manufactured from the same raw material under similar conditions shall be grouped together to constitute a lot.

A-1.2 For ascertaining the conformity to the requirement of the standard samples of umbrellas shall be selected and tested separately from each lot.

A-2. SAMPLING

A-2.1 The number of umbrellas to be selected at random from the lot shall depend upon the size of lot and shall be in accordance with col 1, 2 and 4 of Table 1.

A-2.2 The umbrellas in the sample shall be selected at random from the lot and in order to ensure randomness of selection methods recommended in IS : 4905-1968* may be used.

A-3. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-3.1 The umbrellas selected according to 2.1 and 2.2 shall be inspected for workmanship and finish (see 5). The lot shall be considered as conforming to these requirements if the number of defectives found in the sample is less than or equal to the corresponding permissible number of defective as given in col 3 of Table 2.

*Methods for random sampling.

TABLE 2 SAMPLE SIZE AND CRITERIA FOR CONFORMITY

LOT SIZE	FOR WORKMANSHIP AND FINISH		FOR PERFORMANCE TEST AND PULL TEST	
	Sample Size	Acceptance Number	Sample Size	Acceptance Number
(1)	(2)	(3)	(4)	(5)
Up to 100	8	0	3	0
101-150	13	0	5	1
151-300	20	1	8	1
301-500	32	1	13	2
501-1 000	50	2	20	3
1 001 and above	80	3	32	5

A-3.2 A sample of size as given in col 4 of Table 2 shall be selected at random and shall be inspected for performance test (*see 6.1*) and pull test (*see 6.2*). The lot shall be considered as conforming to these requirements if the number of defectives found in the sample is less than or equal to the corresponding permissible number of defectives as given in col 5 of Table 2.

A-3.3 The lot shall be considered as conforming to the standard if 3.1 and 3.2 are satisfied.

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INDIAN STANDARDS INSTITUTION

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones : 26 60 21, 27 01 31

Regional Offices :

Western : Novelty Chambers, Grant Road

Eastern : 5 Chowinghee Approach

Southern : C.I.T. Campus, Adyar

Northern : B69, Phase VII

Telegrams : Manaksantha

Telephone

BOMBAY 400007 89 53 28

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S.A.S. NAGAR 3 78 26

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Branch Offices :

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22E Kalpana Area

5-8-56G, L.N. Gupta Marg

R-14 Yudhistir Marg, C Scheme

117/418 B Sarvodaya Nagar

Patliputra Industrial Estate

Honest Bldg (2nd Floor), Rly Station Road

AHMADABAD 300001 2 03 91

BANGALORE 560002 22 48 05

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BHUBANESHWAR 751014 3 56 27

HYDERABAD 500001 22 10 83

JAIPUR 302005 6 98 32

KANPUR 208005 4 72 92

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